Controlling Invasive Plants Throughout Eastern Lake Michigan

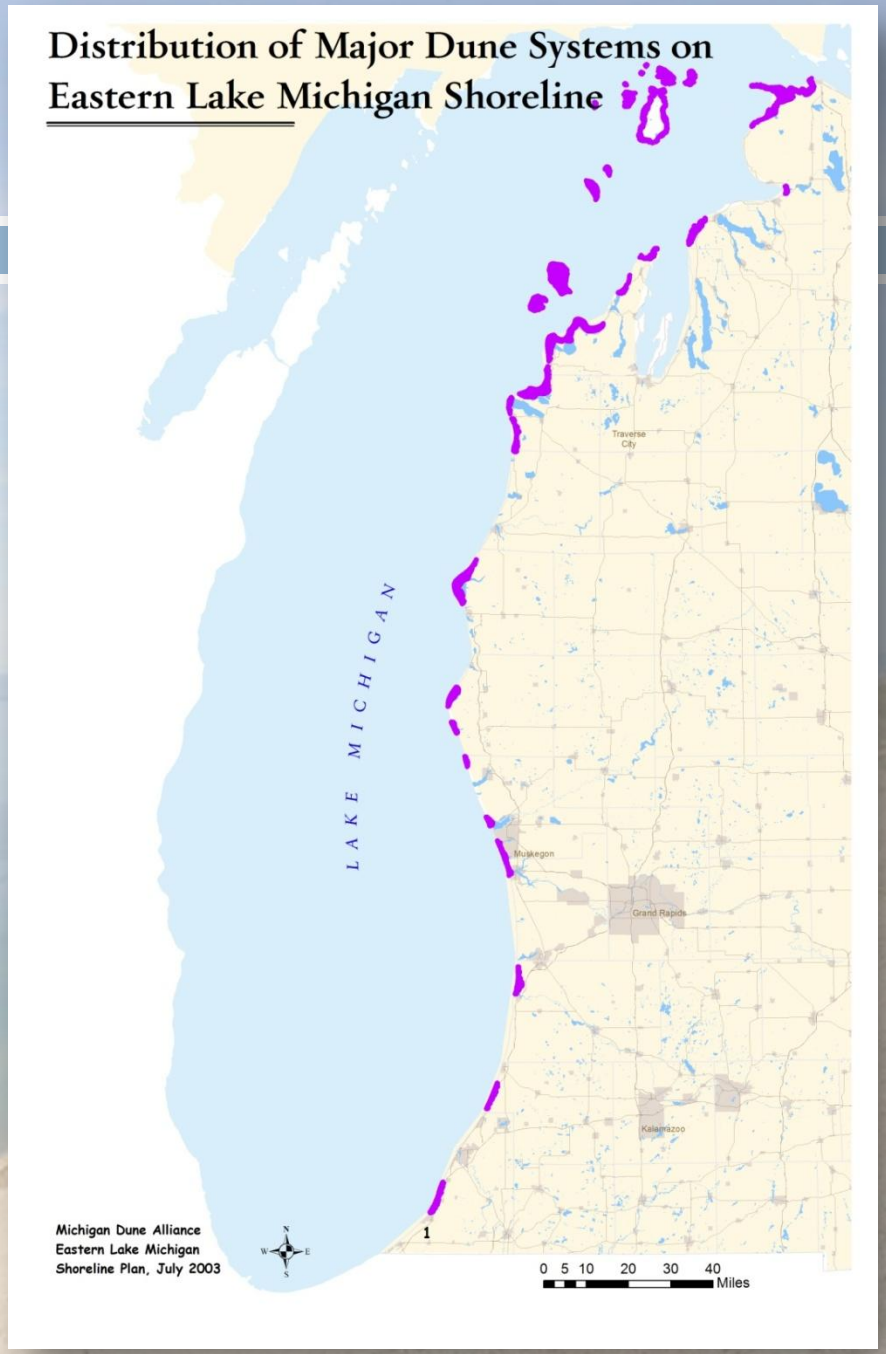
Establishing effective, efficient, collaborative management of terrestrial invasives

The Nature Conservancy
Protecting nature. Preserving life.™

Shaun Howard – Coastal Invasives Coordinator

Michigan Dunes

- Over 275,000 acres
- Highly dynamic
- Largest freshwater dune system in the world
- A PRIORITY FOR CONSERVATION



Unique Ecosystems…

…Supporting Unique Species…

…Supporting Unique Species…

…Under Threat from Invasives

Threat Response:

The Michigan Dune Alliance

- MDA: founded in 1999
  - A coalition of land trusts, agencies, parks, and advocacy groups dedicated to conservation of dunes and shoreline.
    - Identify and fund best strategies
      - Control efforts, outreach, public policy
    - Functions in part as a “Cooperative Weed Management Area”, or CWMA.
- In 2001 performed “Lake Michigan Coastal Threat Assessment” for species like garlic mustard, spotted knapweed, and soapwort

From Bouquet to Backdune…

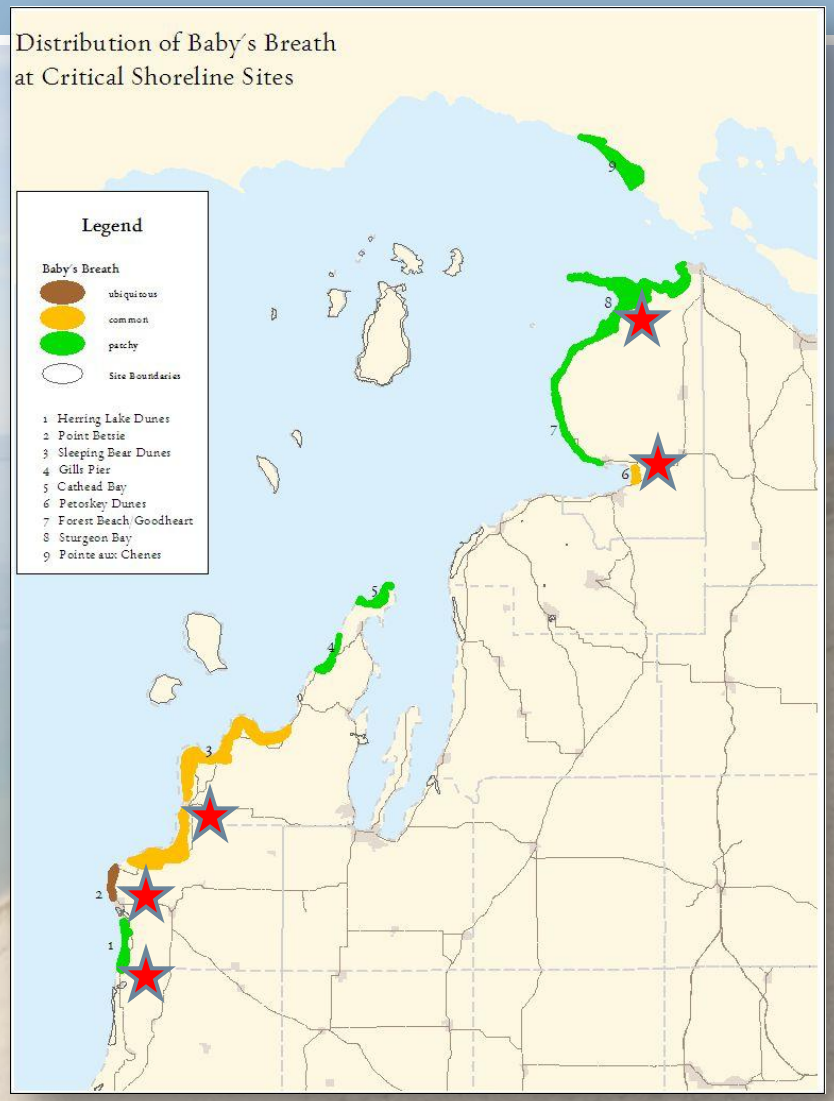
- Baby's breath *(Gypsophila paniculata)*
  - Herbaceous perennial
  - 15,000 seeds per plant
  - Wind dispersed
  - Giant taproot over-stabilizes dune systems

From Bouquet to Backdune...

“Lake Michigan Coastal Restoration Pr

Higher Standards meijer Lower Prices

- Effectively eliminate baby’s-breath from the dune systems of Northwest Lower Michigan
  - 2007-2016 (10 years)
  - Full funding provided by Meijer from 2007-2012
- Project is currently ON SCHEDULE:
  - 1,800 acres infested
  - **In first 5 years, over 50% of all baby’s-breath has been treated!**

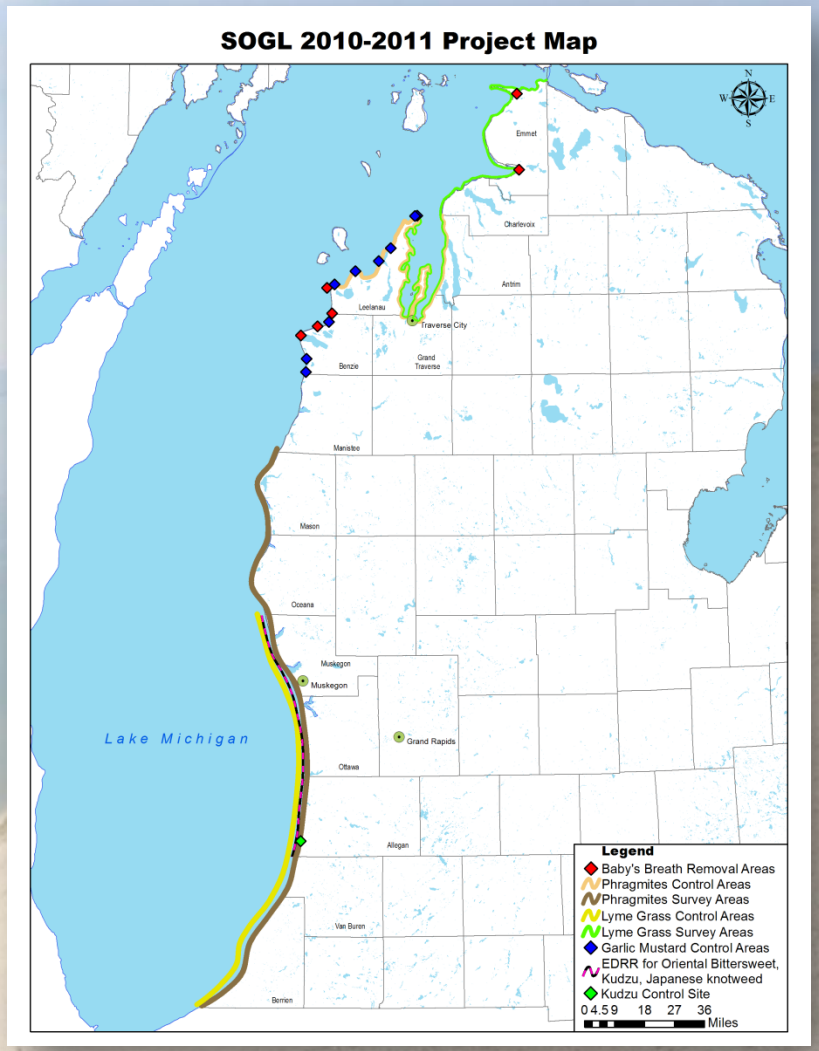


2006

2010

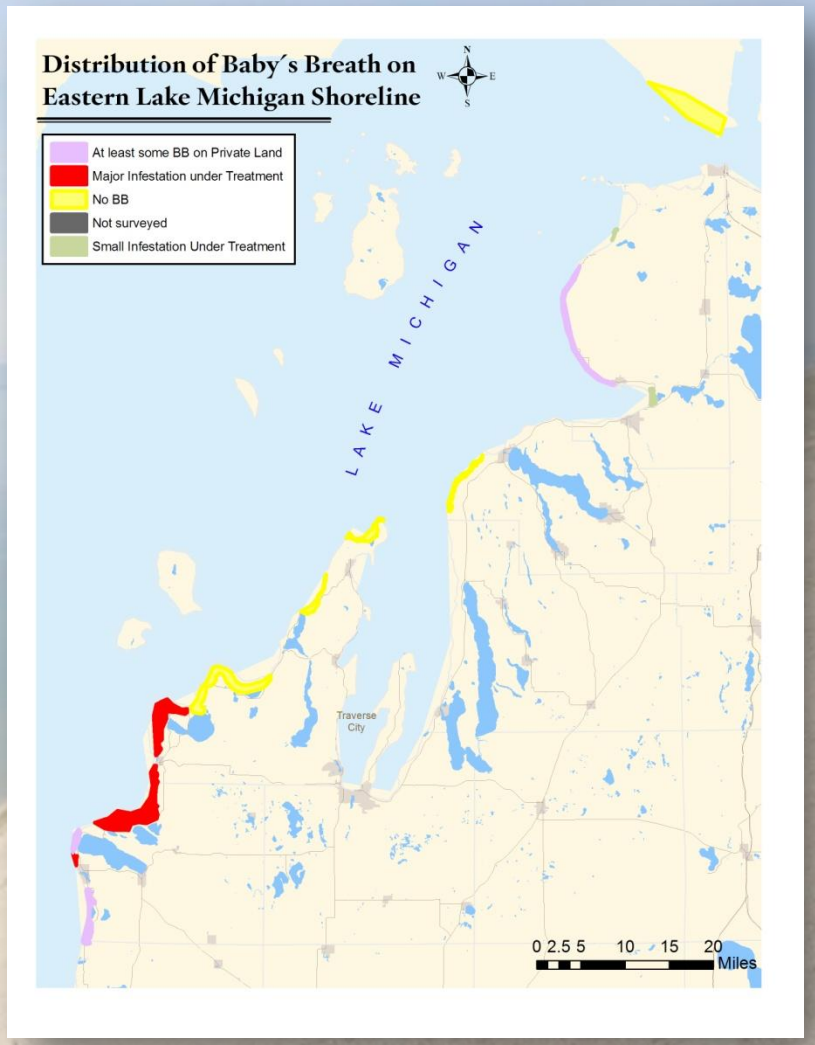
Sustain Our Great Lakes 2010-2011

- National Fish and Wildlife Foundation
  - "Controlling Invasive Plants Throughout Eastern Lake Michigan
    - **Strategic control** of coastal invasives through CWMA partnership
    - **Information and awareness** on invasive distribution and abundance
    - Initial focus on **seven key coastal invasives**



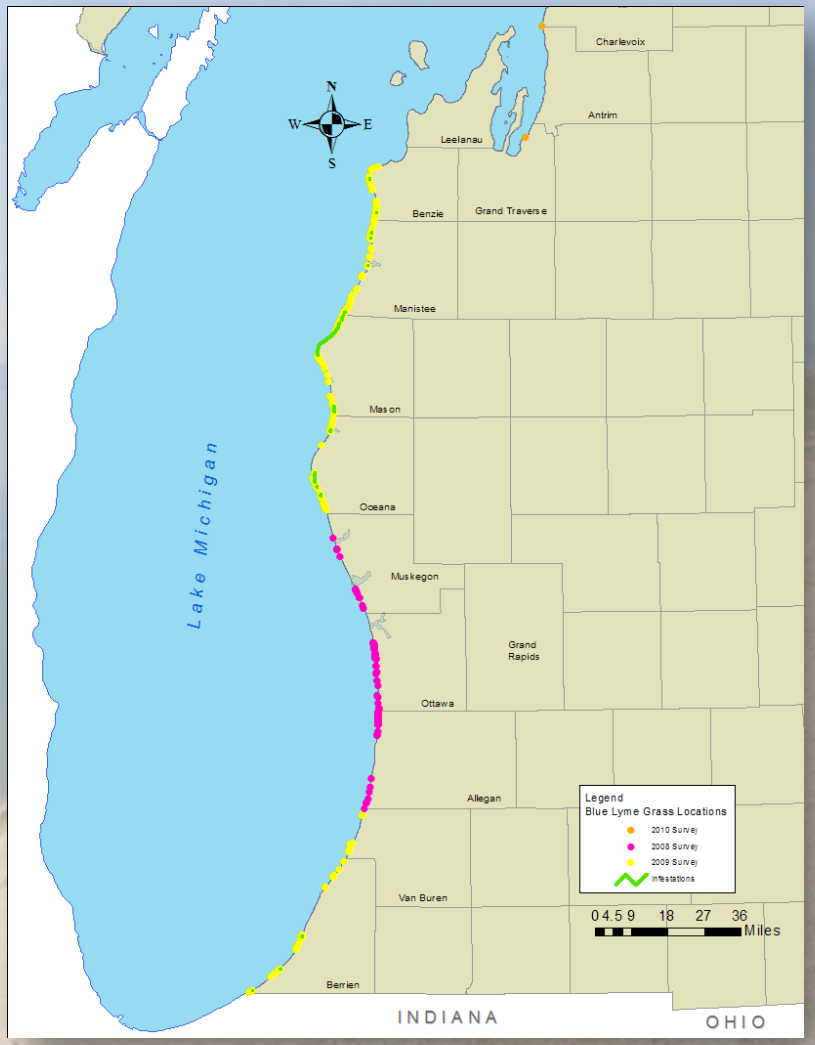
How to Control at Varying Levels of Distribution and density?

- Baby's-breath:
  - Low distribution
  - High density
- Control requires:
  - Intensive treatment
  - Long-term effort



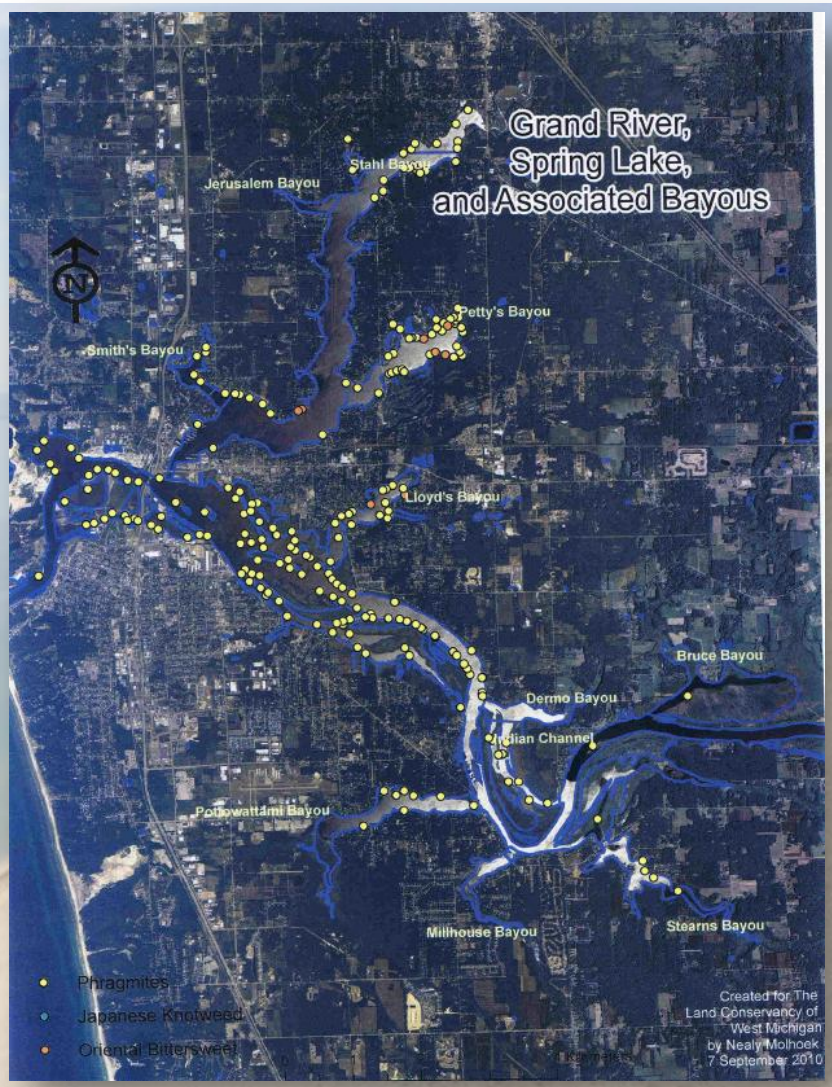
How to Control at Varying Levels of Distribution and density?

- Lyme grass:
  - High distribution
  - Low density
- Control requires:
  - Ongoing survey work
  - Follow-up monitoring



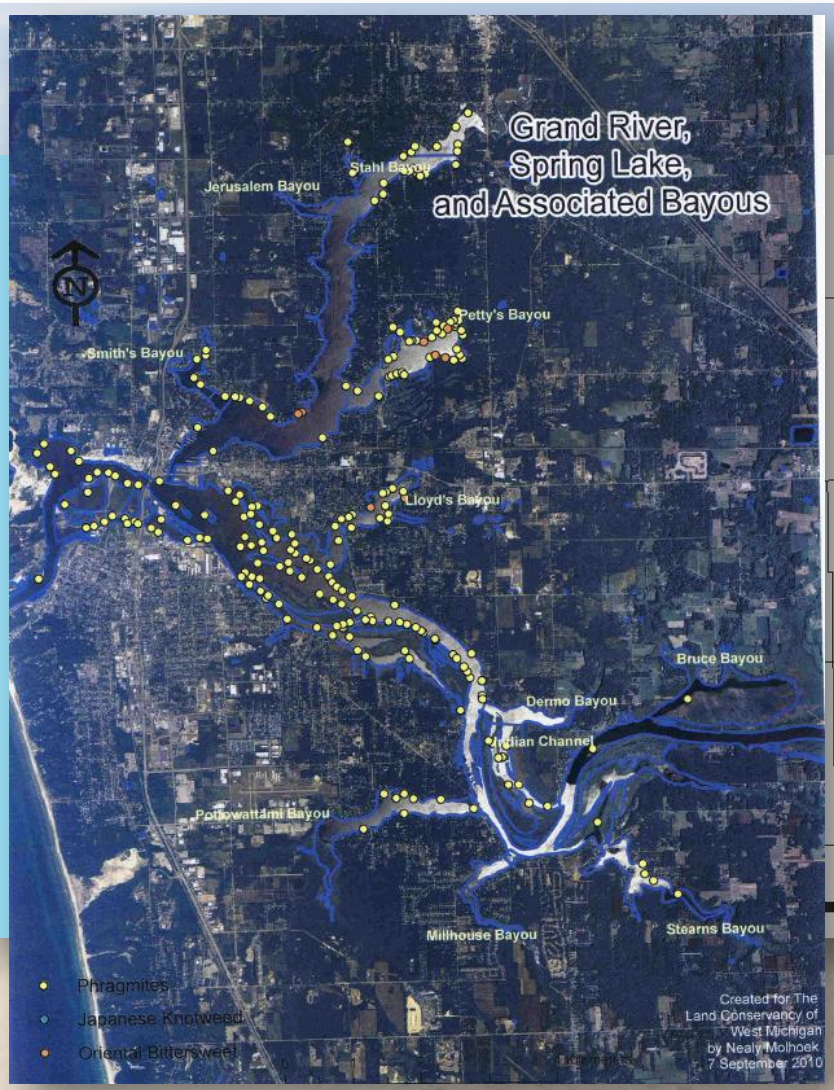
How to Control at Varying Levels of Distribution and density?

- Non-native Phragmites:
  - High distribution
  - High density
- Control requires:
  - Rigorous prioritization
  - Long-term treatment plan



How to Control at Varying Levels of Distribution and density?

- Japanese knotweed:
  - Low distribution
  - Low density
- Control requires:
  - **Early Detection/Rapid Response**
  - Comprehensive surveys and fast treatment



Kudzu （*Pueraria lobata*）

- The ultimate ED/RR species

Kudzu （*Pueraria lobata*）

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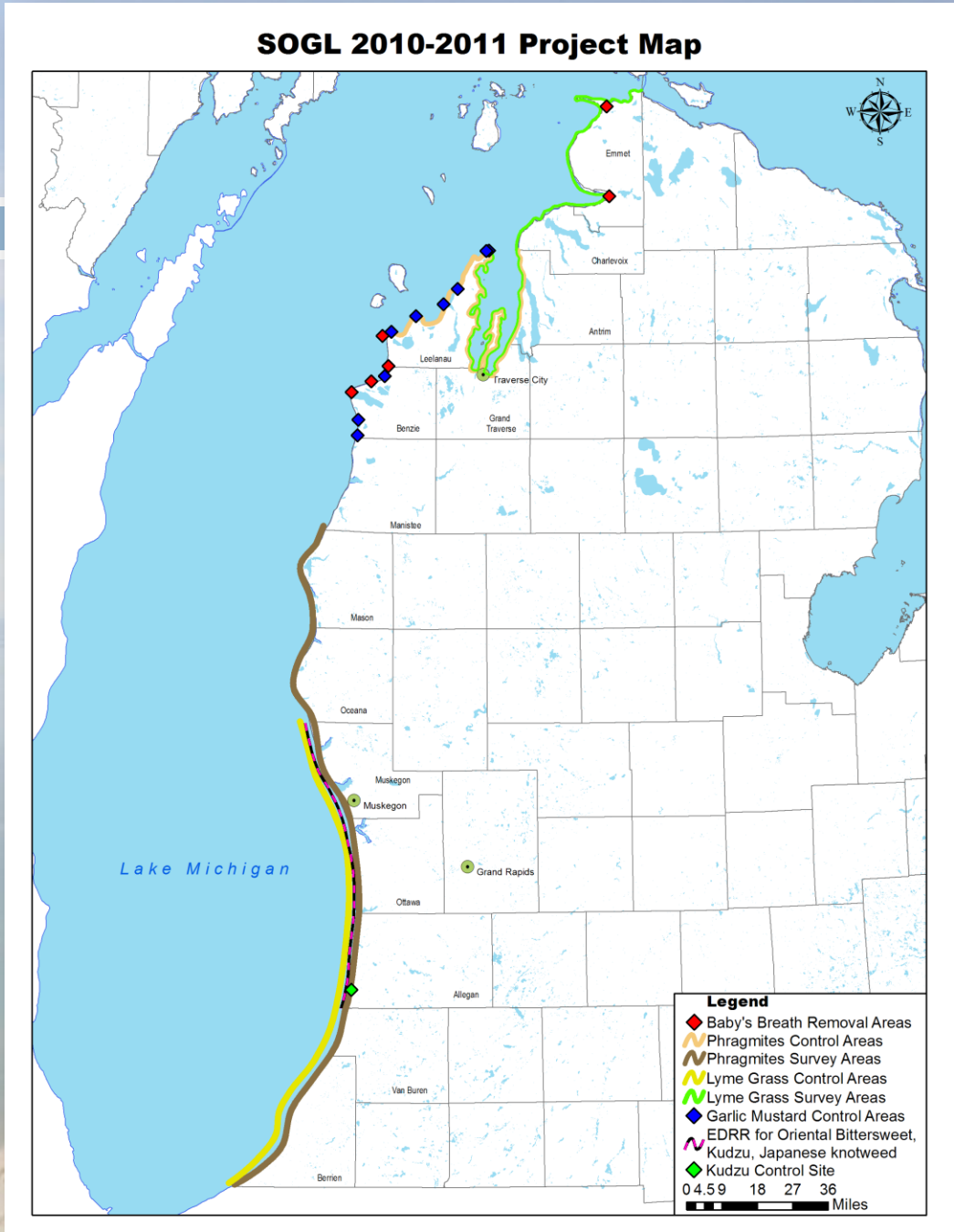
Kudzu （*Pueraria lobata*）

A Regional Approach

- How to survey, treat, and monitor 505 miles of shoreline?
  - Utilize partners – **efficient, tailored response**
    - Local knowledge
    - Resources in place
    - Build on past work



MDA Partners Active in SOGL

- Leelanau Conservancy
- Grand Traverse Regional Land Conservancy
- Land Conservancy of West Michigan
- Southwest Michigan Land Conservancy
- National Park Service at Sleeping Bear Dunes
- Michigan DNR – Parks and Rec. Division
- US Forest Service at Manistee National Forest

Targeted Outcomes

- Widespread species
  - Prioritize
    - Value of site
    - Extent and abundance
    - Potential impacts of population
    - Feasibility of control or restoration
- Regionally-concentrated species
  - Contain spread
  - Develop strategic approach for long-term maintenance
    - Resource allocation
- Newly-emergent species
  - Eradication!
  - Develop and implement ED/RR program
  - Information sharing

Partner Achievements

- Phragmites
  - **50% reduction** in density along 121 miles of shoreline (Grand Traverse Bay/Leelanau Peninsula)
  - **105 miles** of shoreline, wetlands, lakes, and drowned river mouths surveyed
- Garlic mustard
  - **120 acres** removed on 4,000 conserved coastal acres
- Japanese knotweed/Oriental bittersweet/kudzu
  - Develop and implement ED/RR program and survey **75 miles** of shoreline
  - **75% of all populations treated, reducing density by over 25%**
  - **Eliminate** the only* coastal infestation of kudzu

The Nature Conservancy

- Baby's-breath
  - **Over 50%** of all known populations in northwest lower Michigan have received treatment
  - **900+ acres** treated
- Lyme grass
  - Completed a 3 year survey of all **505 miles** of ELM shoreline
  - Treatment efforts have reduced populations by **over 30%**

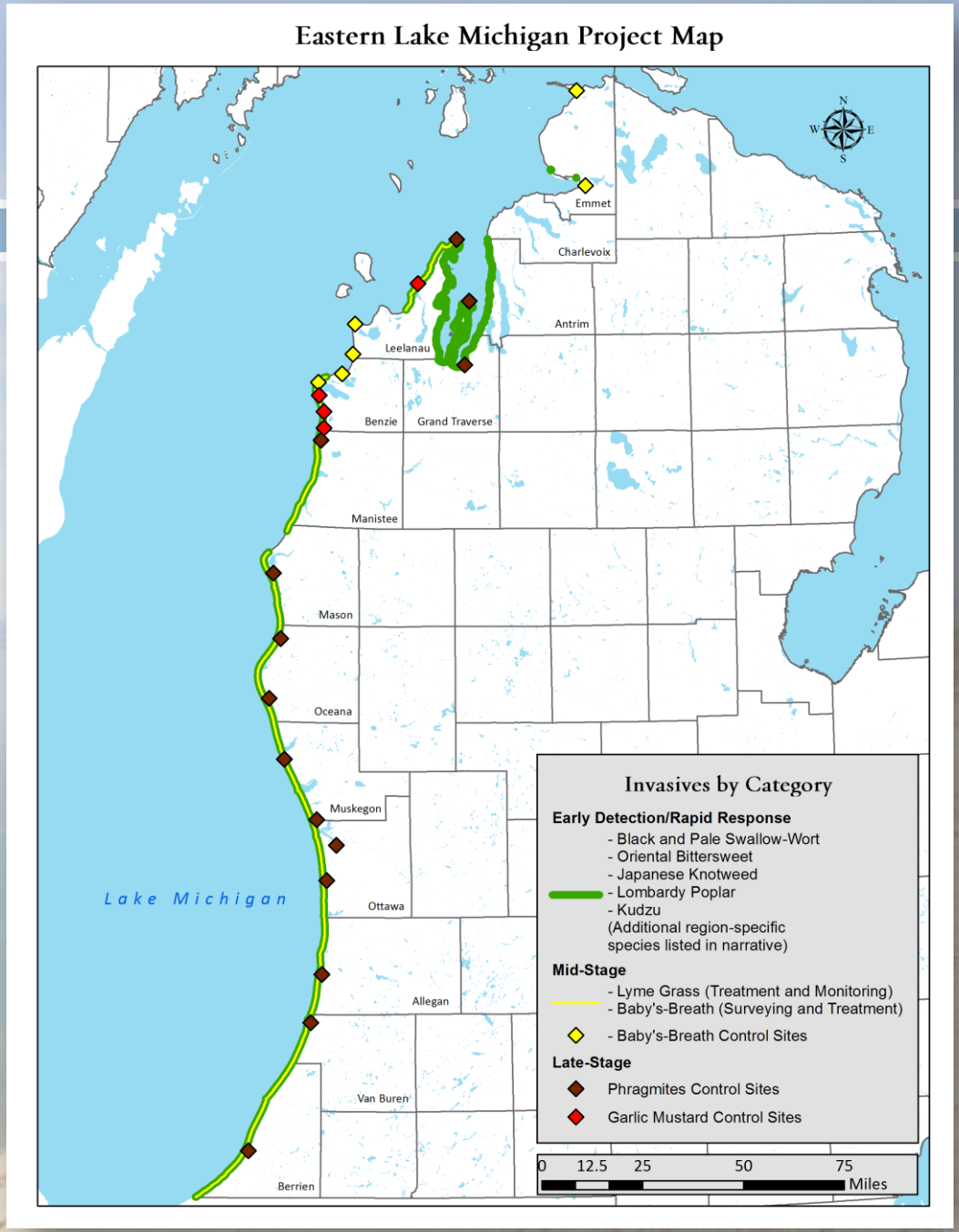
Information Sharing

- All survey and treatment data is made publicly available through MISIN
  - Track progress and quantify output
  - A record of distribution (future comparison)
  - Informs others and provides a “starting point”
- MISIN.MSU.EDU – research, recon, reporting

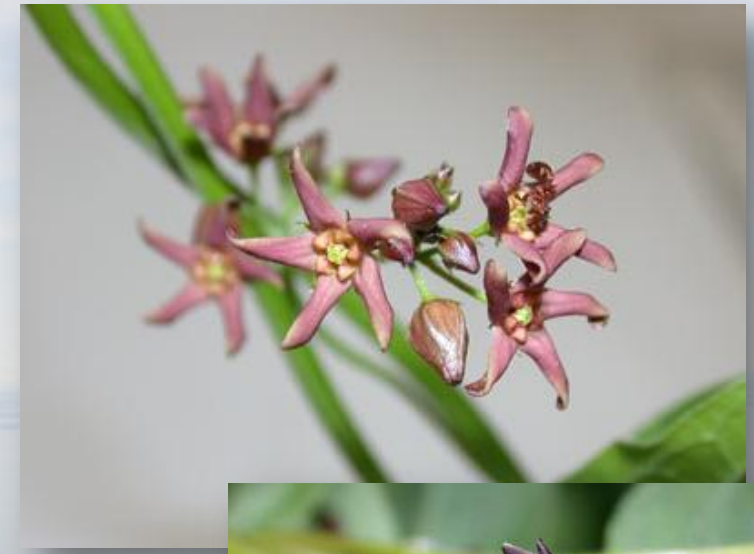
MISIN Midwest Invasive Species Information Network

SOGL II

- "Full-Scale Invasive Plant Control in Eastern Lake Michigan"
  - Expand ED/RR program
    - Variety of new species, widespread and regionally-specific
    - 400 miles of shoreline
  - Control and/or eradicate mid-stage invasives
  - Prioritize treatment efforts for late-stage invasives



Project Growth



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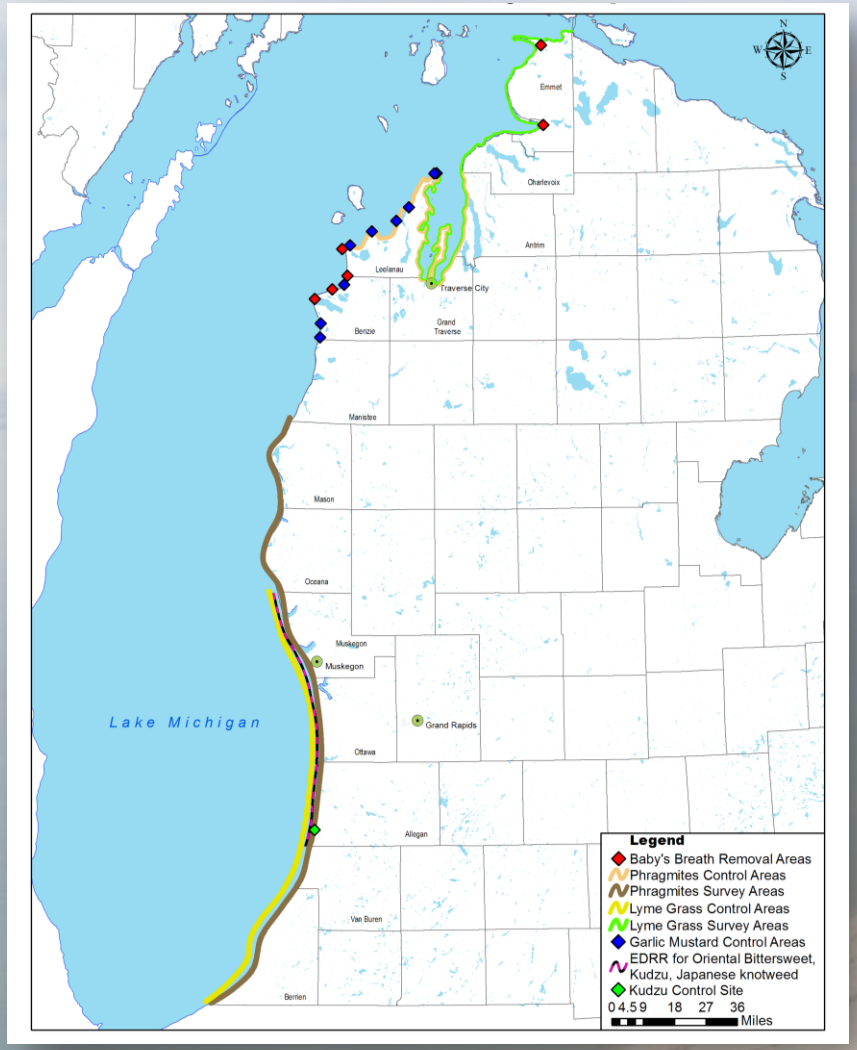

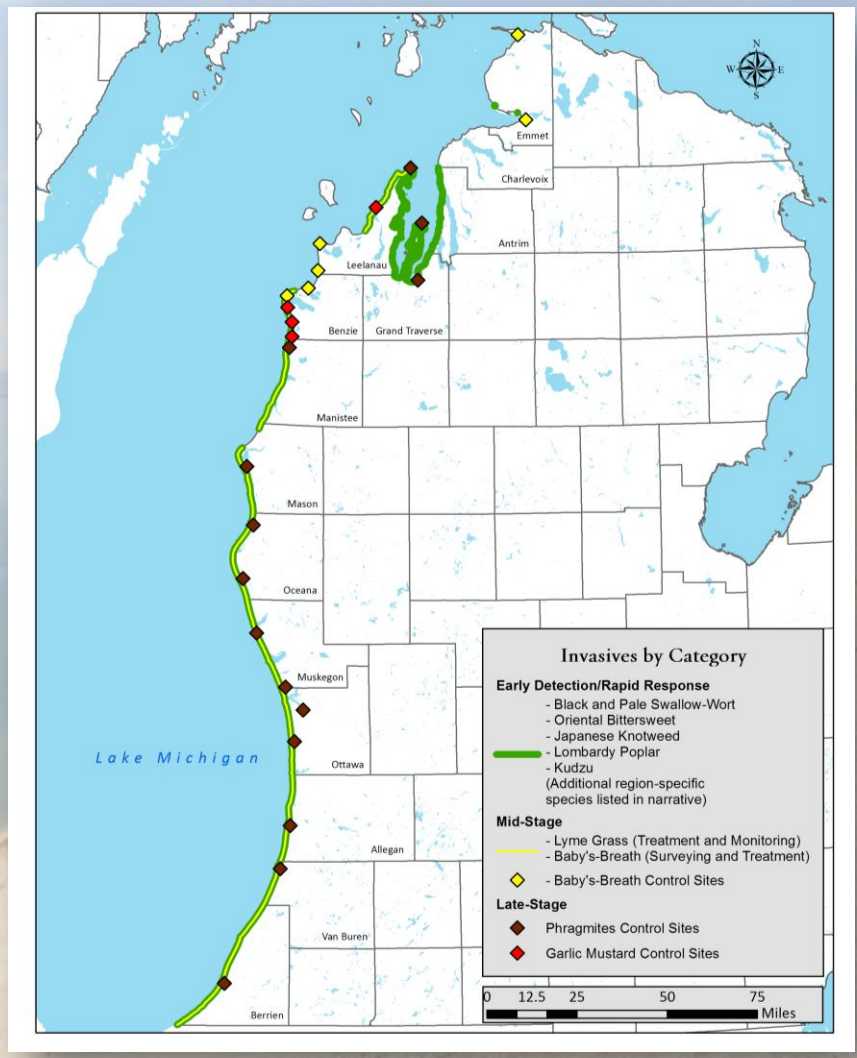

Looking ahead

- Invasives at a Lake-Wide Scale
  - Islands
  - Upper Peninsula
  - Wisconsin, Illinois, Indiana
- Resource Allocation
  - Needs for ongoing surveying, treatment, and monitoring
- Long Term Funding
  - Align timelines of funding and treatment
  - Sustainability

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